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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/984,005	12/03/1997	RANDY R. DUNTON	42390.P5319	1674

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EXAMINER

WILSON, JACQUELINE B

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 11/19/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/984,005

Applicant(s)

Dunton et al.

Examiner

Jacqueline Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 9, 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION

1. In view of the Board Decision filed on 08/09/02, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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NOTE: The majority of the claimed language states the broad limitation of “adapted to”. This is interpreted as being “capable of” performing the task, but not necessarily doing it. As long as it could it capable, then it is performing the limitation.

3. Claims 1-5, 8-13, 16, 17, 21, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ando (US 4,710,817).

Regarding Claim 1, Ando teaches an image processing circuitry (within each picture element, figs. 6 and 7) adapted to process digital pixel output signals produced by a digital imaging array (col. 3, lines 21+). Ando teaches that when a signal level exceeds a predetermined threshold, processing is performed on that signal by subtracting the threshold voltage from the output of the amplifier and sends that signal to an A/D converter and pulse counter (col. 6, lines 15+). The signals that fall below the predetermined threshold are output to a differentiating circuit (22). This reads on the limitation of processing saturated digital pixel output signals differently from non-saturated digital pixel output signals.

Regarding Claim 2, Ando teaches imaging array sensors (referred to as photosensors 8A), and the image processing circuitry being “adapted” to process saturated digital pixel output signals by subtracting an estimate of dark image fixed pattern noise for the imaging array sensors. Although not specifically disclosed, the circuitry need not perform the subtracting an estimate of the dark image fixed pattern noise, however, it is capable of performing this limitation.

Regarding Claim 3, Ando teaches imaging array sensors (referred to as photosensors 8A), and the image processing circuitry being “adapted” to process saturated digital pixel output

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signals by estimating the dark image fixed pattern noise by sampling from a dark image comprising stored digital pixel output signals. Although not specifically disclosed, the circuitry need not perform estimation of the dark image fixed pattern noise by sampling from a dark image, however, it is capable of performing this limitation.

Regarding Claim 4, Ando teaches the image processing circuitry is “adapted to” sample the dark image in regions corresponding to the regions of saturated digital pixel output signals in an image of interest. Although not specifically disclosed, the circuitry need not perform the sample the dark image in regions corresponding to the regions of saturated digital pixel output signals, however, it is capable of performing this limitation.

Regarding Claim 5, Ando teaches the image processing circuitry is adapted for use with imaging array sensors comprising a CMOS sensor (indicated as photodiodes; see abstract).

Regarding Claim 8, Ando teaches the image processing circuitry is “adapted to” detect regions of saturated digital pixel output signals in an image of interest. Although not specifically disclosed, the circuitry need not perform detecting regions of saturated digital pixel output signals, however, it is capable of performing this limitation.

Claims 9 and 17 are analyzed and discussed with respect to Claim 1. (See rejection of Claim 1 above.)

Claim 10 is analyzed and discussed with respect to Claim 2. (See rejection of Claim 2 above.)

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Claim 11 is analyzed and discussed with respect to Claim 3. (See rejection of Claim 3 above.)

Claim 12 is analyzed and discussed with respect to Claim 4. (See rejection of Claim 4 above.)

Claim 13 is analyzed and discussed with respect to Claim 5. (See rejection of Claim 5 above.)

Claim 16 is analyzed and discussed with respect to Claim 8. (See rejection of Claim 8 above.)

Claim 21 is analyzed and discussed with respect to Claim 5. (See rejection of Claim 5 above.)

Regarding Claim 24, Ando'817 teaches detecting regions of saturated digital pixel output signals in an image of interest by determining which pixels exceeds a predetermined threshold, processing that signal by subtracting the threshold voltage from the output of the amplifier and sending that signal to an A/D converter and pulse counter (col. 6, lines 15+). This reads on detecting regions of saturated digital pixel output signals in an image of interest.

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

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art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 7, 14, 15, 18, 19, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando'817 in further view of the applicants conceded prior art.

Regarding Claims 6 and 7, Ando'817 fails to specifically teach the image processing circuitry comprises dark fixed pattern noise reduction circuitry. However, the applicants conceded prior art teaches that it is well known in the art to further use a memory such that "dark image" output from the sensor may be read into the memory preventing further exposure to light and then subtracting the stored dark image from the image of interest for correcting fixed pattern noise. The applicant teaches that this technique is used in digital signal format. Although disadvantages are taught, the method of using dark fixed pattern noise circuitry is notoriously well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to further include dark fixed pattern noise reduction circuitry.

Claims 14 and 15 are analyzed and discussed with respect to Claims 6 and 7. (See rejection of Claims 6 and 7 above.)

Claim 18 is analyzed and discussed with respect to Claim 6. (See rejection of Claim 6 above.)

Claim 19 is analyzed and discussed with respect to Claim 6. (See rejection of Claim 6 above.)

Claims 22 and 23 are analyzed and discussed with respect to Claim 6. (See rejection of Claim 6 above.)

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Allowable Subject Matter

6. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ginosar et al. (US 5,247,366)- teaches a LUT that processes
saturated signals differently than non-saturated (see fig. 10).

8. Any inquiries concerning this communication from the examiner should be directed to **Jacqueline Wilson** whose telephone number is (703) 308-5080. The examiner can normally be reached Monday-Friday (alternate Fridays off) from 9:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wendy Garber**, can be reached at (703) 305-4929. The fax number for this group is (703) 872-9314.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

or Faxed to:


(703) 872-9314, (for informal or draft communications, please label

“PROPOSED” or “DRAFT”)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, V.A., Sixth Floor (Receptionist).

JBW

October 29, 2003



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